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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,411	05/26/2001	Claus Skaanning	10012829-1	4978

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IP Administration  
Legal Department, 20BN  
HEWLETT-PACKARD COMPANY  
P.O. Box 10301  
Palo Alto, CA 94303-0890

EXAMINER

BOOKER, KELVIN E

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 06/04/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/866,411

Applicant(s)

SKAANNING ET AL.

Examiner

Kelvin E Booker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Detailed Office Action.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1-36** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claims 1 and 19** provide for *using a Bayesian Network structure to identify underlying issues and associated sub models*, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. As disclosed, the above mentioned claims focus on the use of a Bayesian Network without delineating the steps or process used to instantiate the subordinate issues and sub-models cited. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

### *Claim Rejections - 35 USC § 101*

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claims 1-36** are rejected under 35 U.S.C. 101 because the invention as disclosed in **claims 1 and 19** are directed to non-statutory subject matter. While the claims are in the technological arts, they are not limited to practical applications in the technological arts.

Specifically, the claims focus on a series of steps to be performed on a computer, but the ideas are disclosed abstractly from any particular practical application. **Claims 1 and 19** provide for a method and system which employs a Bayesian Network structure to identify underlying issues and associated sub models, but fail to disclose the steps necessary to enable the claimed process.

To constitutionally interpret the word “process”, the Supreme Court has held that: “\*\*\*A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing. \*\*\*The Process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be a secondary consequence.”(emphasis added) *Diamond, Commission of Patents and Trademarks v. Diehr and Lutton*, 209 USPQ 1, 6 (1981) quoting *Cochrane v. Deener*, 94 U.S. 780, 787-788 (1876).

This Constitutional interpretation of the word “process” is a long-standing one that the Supreme Court requires to be applied in interpreting 35 USC 101. *Diamond v. Diehr* at 6. Consequently, the use of that interpretation is Constitutionally required when we interpret the Federal Circuit’s standard that a “new and useful process” is one that produces a useful, concrete, and tangible result”. Cf. *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 47 USPQ2d 1596, 1600-1601 (Fed. Cir. 1998).

Applicant discloses no “certain substances” that have been “transformed or reduced” in that applicant’s claims disclose no specific computer-readable medium, no manipulation of specific data representing physical objects or activities (pre-computer activity), nor do they disclose any specific independent physical acts being performed by the invention (post-computer activity).

Further, **claims 1-18** are directed at *a method for selecting sub-models* without disclosing any computer implemented processing. Abstract ideas (see Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759) or the mere manipulation of abstract ideas (see Schrader, 22 F.3d at 292-93, 30 USPQ2d at 1457-58) are not patentable.

As disclosed, **independent claim one** focuses on nonfunctional descriptive material, which is inclusive of the mere arrangement of data without engaging functionality when employed as a computer component.

**Claim 19** focuses on *a system used in selecting sub-models*, wherein the elements are recited in means plus function format, however the claim fails to define a statutory specific machine. A machine or manufacture or system claim may be one of two types: (1) a claim that encompasses any and every machine for performing the underlying process or any and every manufacture that can cause a computer to perform the underlying process, or (2) a claim that defines a specific machine or manufacture. When a claim is of the first type, Office personnel are to evaluate the underlying process the computer will perform in order to determine the patentability of the product.

The mere fact that a hardware element is recited in the claim does not necessarily limit the claim to a specific machine or manufacture. If a product claim encompasses any and every

computer implementation of a process, when read in light of the specification, it should be examined on the basis of the underlying process. Such a claim can be recognized, as it will define the physical characteristics of a computer or computer component exclusively as functions or steps to be performed on or by a computer, and encompass any and every product in the stated class, configured in any manner to perform the process.

Claims that define a computer related invention as a specific machine or specific article of manufacture must define the physical structure of the machine or manufacture in terms of its hardware or hardware and "specific software." The applicant may define the physical structure of a programmed computer or its hardware or software components in any manner that can be clearly understood by a person skilled in the relevant art. Generally a claim drawn to a particular programmed computer should identify the elements of the computer and indicate how those elements are configured in either hardware or a combination of hardware and specific software.

### *Conclusion*

5. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- A. Schreckengast et al., U.S. Patent Application Publication No. 2002/0128943;
- B. Lapointe et al., U.S. Patent No. 6,678,669;
- C. Skaaning et al., U.S. Patent No. 6,535,865;
- D. Clemons, "Evolution of Strategic Investments in Information Technology";
- E. Konana et al., "The Implications of Online Investing";
- F. Tseng et al., "Sensitive Sequential Myopic Information Gathering";

G. Pennock et al., "Toward a Market Model for Bayesian Inference";

H. Moses, "A Consideration of the Impact of Interactions with Module Effects on the Direct Measurement of Subjective Software Attributes";

I. Scheerer et al., "Expert System Tools for Describing and Predicting the Coastal Ocean Environment";

J. Wilkins et al., "Collaborative Decision Making and Intelligent Reasoning in Judge Advisory Systems";

K. Bargar et al., "Sonification of Probabilistic Belief Networks";

L. Neil et al., "Using Bayesian Belief Networks to Predict the Reliability of Military Vehicles";

M. Ogunyemi et al., "Probabilistically Predicting Penetrating Injury for Decision Support";

N. Gerevini et al., "Modeling the Treatment Scheme of Sustained Ventricular Tachycardia with a Bayesian Belief Network";

O. Gur-Ali et al., "Induction of Rules Subject to a Quality Constraint: Probabilistic Inductive Learning";

P. Elomaa et al., "On Inducing Topologically Minimal Decision Trees";

Q. Bradley et al., "On the Methodology for Comparing Learning Algorithms: A Case Study";

R. Bandar et al., "An Optimised Decision Tree Induction Algorithm for Real World Data Domains";

S. Baba et al., "Application of Techniques of Computational Intelligence for Constructing Reliable Decision Support Systems";

T. Baba et al., "A User Friendly Decision Support System for Dealing Stocks Using Neural Network";

U. Green et al., "Artificial Intelligence in Financial Markets";

V. Gleizes et al., "An Adaptive Multi-Agent Tool for Electronic Commerce";

W. Kandt et al., "A Financial Investment Assistant";

X. Kosaka et al., "Applications of Fuzzy Logic/Neural Network to Securities Trading Decision Support System";

Y. Li et al., "Investment Decision Making Using FGP: A Case Study";

Z. Ornes et al., "A Neural Network that Explains as Well as Predicts Financial Market Behavior";

AA. Wang et al., "Dynamic Trading Decision Support System Using Rule Selector Based on Genetic Algorithms";

BB. Wang et al., "Stock Trading Decision Support System Using a Rule Selector Based on Sliding Window";

CC. Hiemstra, "A Stock market Forecasting Support System Based on Fuzzy Logic";

DD. Chou et al., "A Rule-Based Neural Stock Trading Decision Support System";

EE. Baba et al., "Utilization of Neural Network for Constructing a User Friendly Decision Support System to Deal Stocks"; and

FF. Moon et al., "An Intelligent Decision Support System for Stock Investment";



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6. An inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Booker whose telephone number is (703) 308-4088. The examiner can normally be reached on Monday-Friday from 7:00 AM-5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (703) 308-3179. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

An inquiry of a general nature or relating to the status of this application proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



**Anthony Knight**  
Supervisory Patent Examiner  
Group 3600

**K.E.B.**

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**May 20, 2004**